

A large school of fish, likely carp or similar freshwater species, swimming in clear, greenish water. The fish are densely packed in some areas and more spread out in others, creating a sense of movement and abundance. The water has a slightly rippled surface, reflecting light and creating a textured background for the text.

The Freshwater Biodiversity Crisis

Kathy Hughes
Freshwater Specialist
WWF-UK

Friday 28th June 2019
SEG 10th Anniversary, Natural History Museum, London



Freshwater Biodiversity

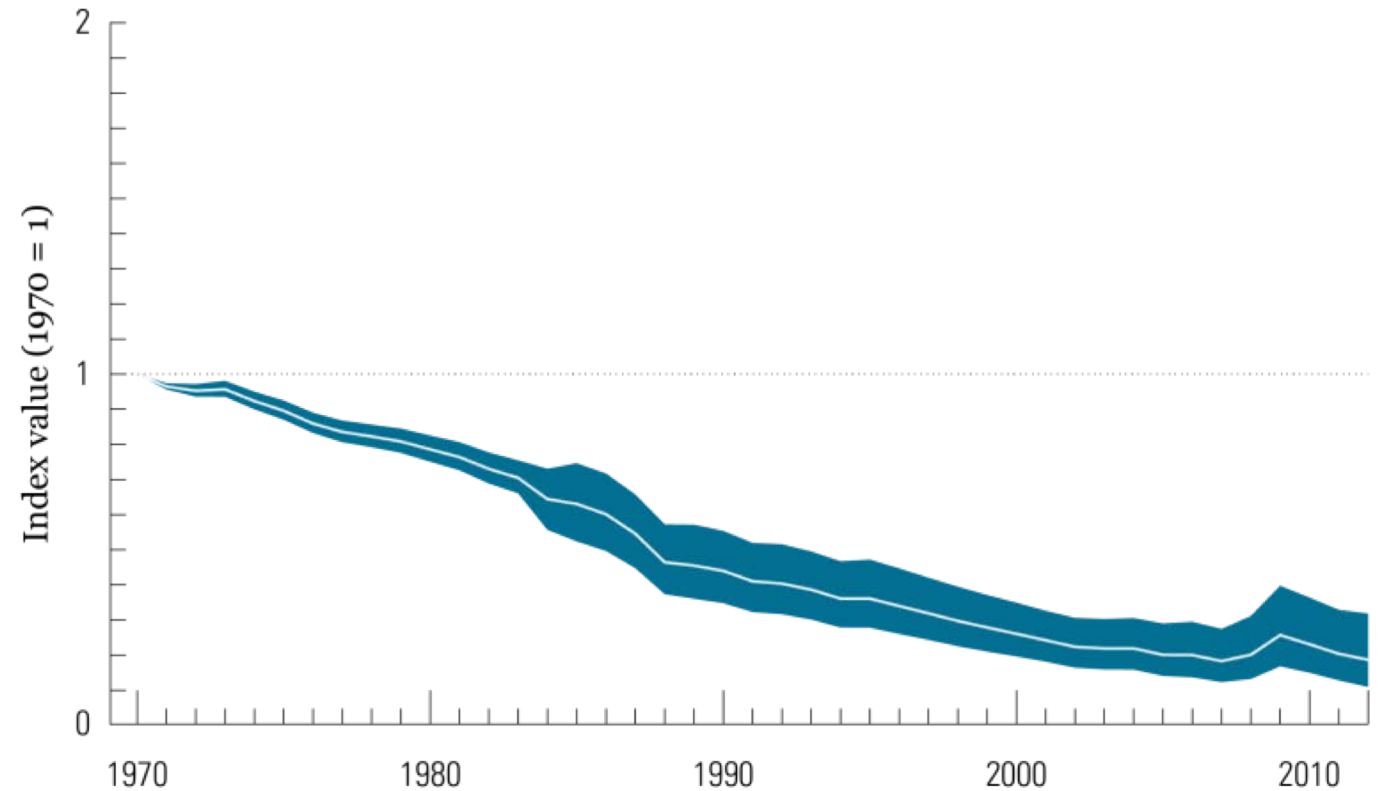
Freshwater ecosystems occupy less than 1% of the earth's surface...

...yet, are home to 10% of the world's wildlife

Global trends in freshwater biodiversity

Living Planet Index

WWF/ZSL (2018)



- 83% decline in populations of freshwater species
- Rate of decline in populations of freshwater species is twice the rate of that in marine and terrestrial biomes

Global trends in freshwater biodiversity



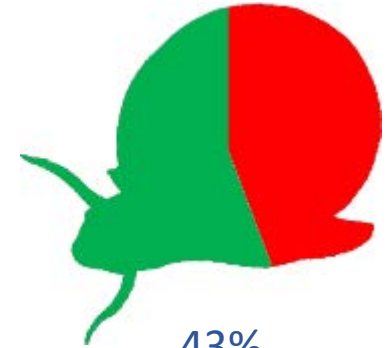
30%

100% assessed



30%

~55% species assessed



43%

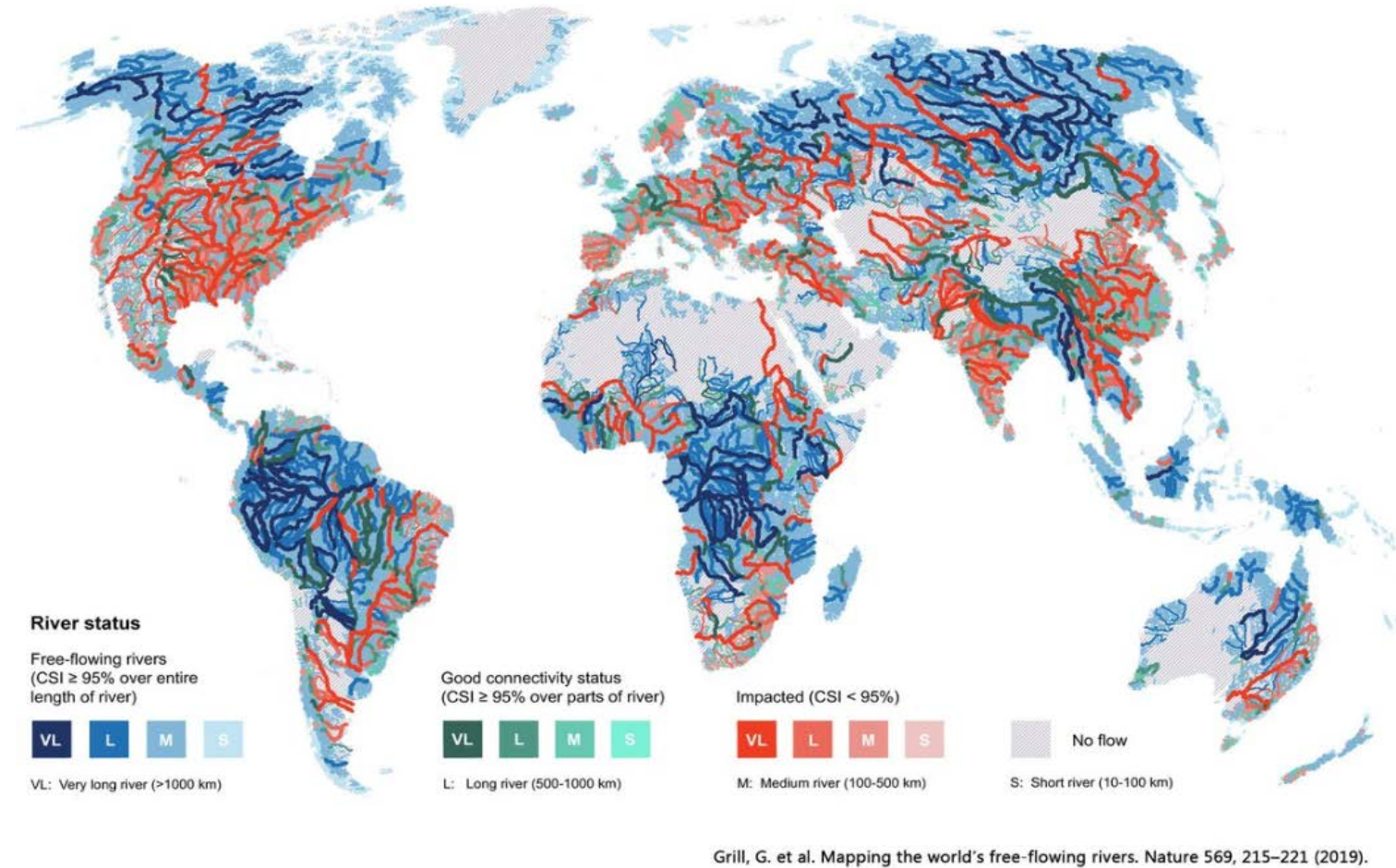
~70% assessed

IUCN Red List 2018.2

- 1/3 of all freshwater species at threat of extinction including:
 - 61% of freshwater turtles (81% of Asian turtles)
 - 40% of amphibians
 - 30% freshwater fish
 - 43% of freshwater mammals
- 1/4 of all Critically Endangered species are freshwater species

Global threats

- 87% of wetlands lost globally since 1700 (IPBES, 2019)
- 300-400m tons of pollution dumped into freshwater yearly (IPBES, 2019)
- Over 80% of waste water untreated (WWAP, 2012).
- 70% of all water abstraction for agriculture; food demand expected to increase by 70% by 2050 (WWAP, 2012)
- Inland capture minimum 11.9 million tonnes; inland aquaculture 47.1 million tonnes (FAO, 2018)
- Freshwater species at high risk of climate change (Poff, Olden and Strayer, 2012)

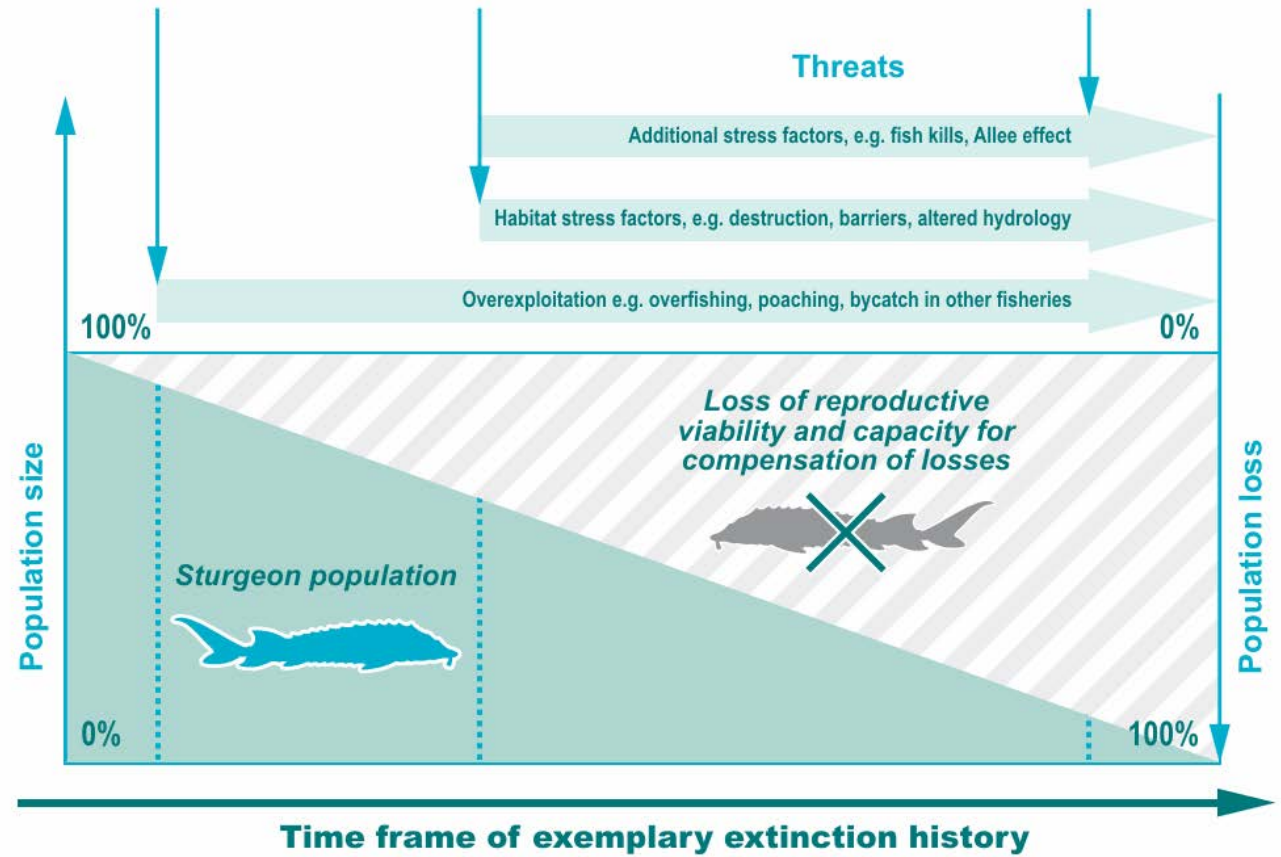


- 1/3 of the world's large rivers are free-flowing (Grill *et al.*, 2019)

Sturgeon survived the Cretaceous–
Paleogene extinction but are
succumbing to the Anthropocene



85% OF
ACIPENSERIFORMES
ARE ON THE BRINK
OF EXTINCTION



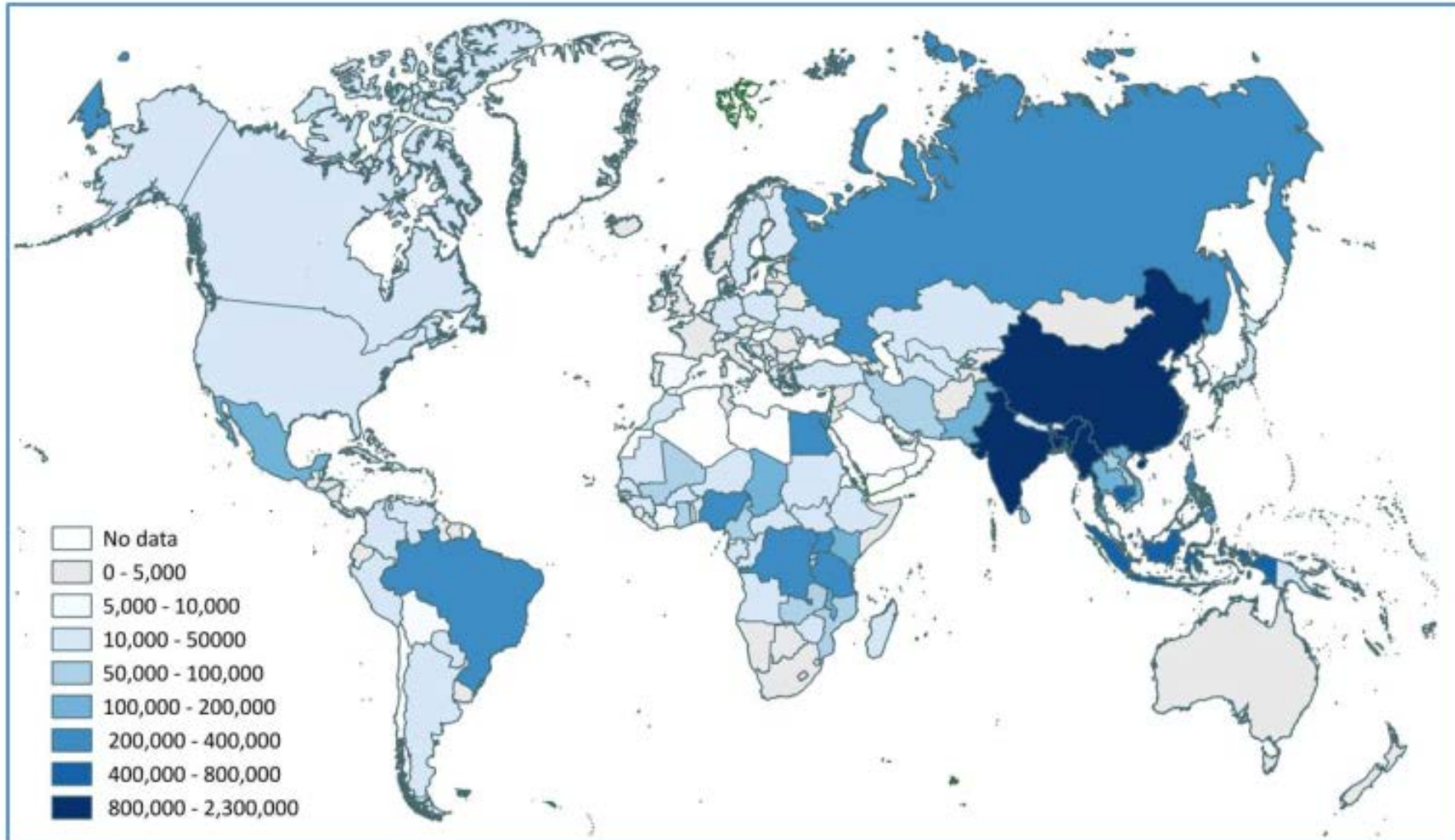
Forgotten fisheries



Fishery type	2014 production	% increase since 2009
Global inland fishery	11.9 million tonnes *77.5 million tonnes	13%
Global marine fishery	81.5 million tonnes	2%
Global inland aquaculture	47.1 million tonnes	32%
Global marine aquaculture	26.7 million tonnes	22%

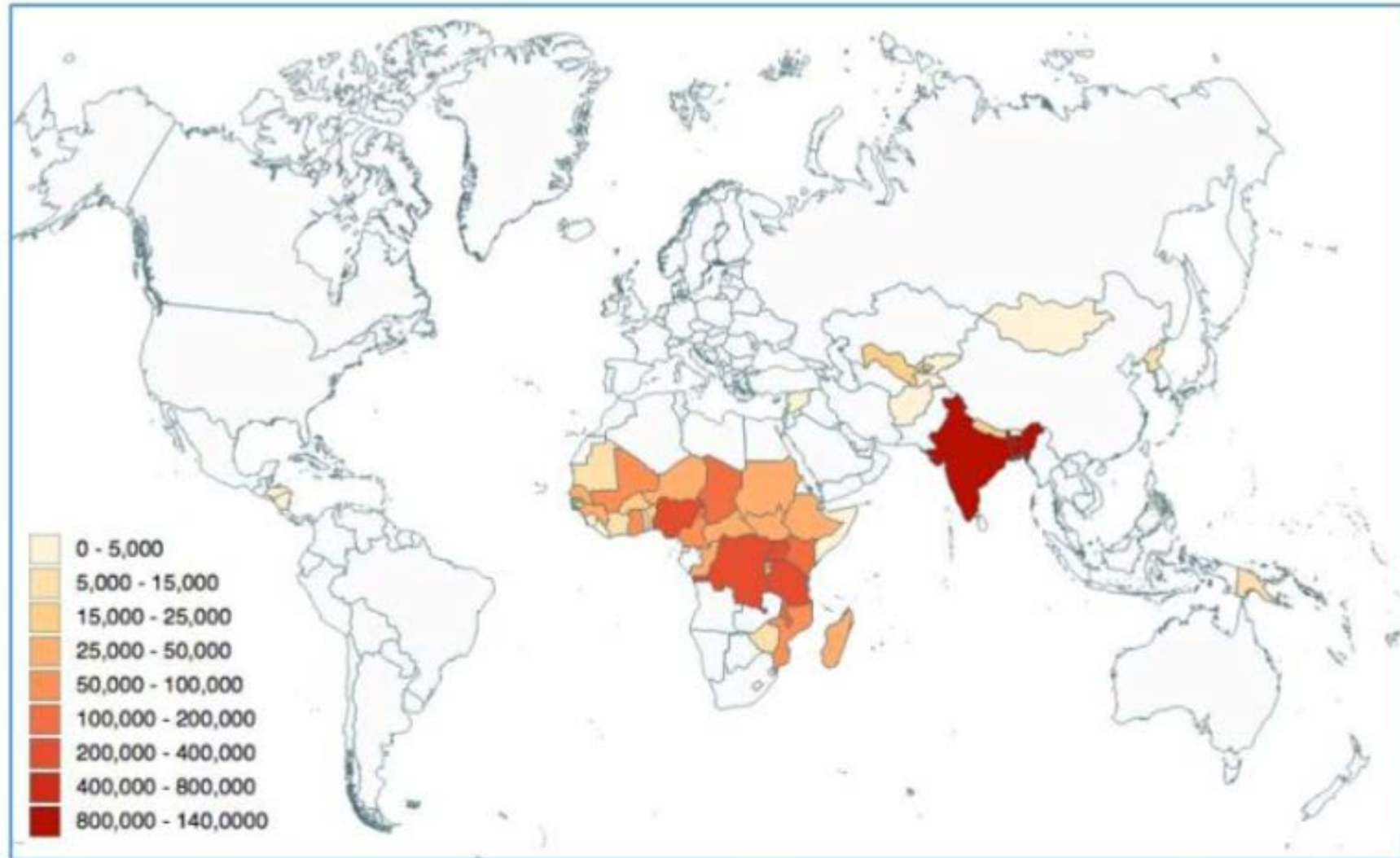
Source: State of the World's Fisheries, FAO 2016

World's biggest inland fish producing countries



Source: Review of the State of Inland Fisheries, FAO, 2018

Inland fisheries & Low Income Food Deficient Countries



Source: Review of the State of Inland Fisheries, FAO, 2018

Freshwater biodiversity crisis; summary

- Freshwater biodiversity is highly diverse and endemic
- The crisis facing freshwater biodiversity is mostly hidden and frequently ignored.
- Freshwater ecosystems offer many essential ecosystem services including freshwater fisheries
- The threats to freshwaters are intense, multiple and synergistic.
- Threats to Anguillids and Acipenseridae are typical of those facing other freshwater biodiversity.

